

PSYCHOLOGICAL AND STYLISTIC CORRELATES OF  
WRITTEN AND CODING BEHAVIOR

By

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PSYCHOLOGICAL AND STYLISTIC CORRELATES OF  
WRITTEN ENCODING BEHAVIOR

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Research has generally demonstrated that the psychological state of the encoder will affect both the style and the impact of a given communication message. However, there have been few attempts to specify the exact nature of the relationship between message style and psychological state in written encoding. The research objectives of this investigation were as follows: (1) to determine both the independent and conjoint effects of stylistic, psychological, and demographic variables on written message production; (2) to develop a method of predicting effective written encoding behavior through multiple regression analysis employing psychological predisposition, written style, and demographic variables as criterion measures; and (3) to suggest a screening instrument for assessing the potential writing ability of applicants in various academic disciplines.

Stepwise multiple regression analyses were employed to generate regression equations predicting performance on the two criterion measures

of writing style and final grade. Standardized OPI scores were used to predict performance on eight separate stylistic indices. In addition, OPI standardized scores, eight stylistic indices, and a combination of both sets of variables were employed as predictors of final grade in an advanced writing course.

The findings indicated that stylistic, psychological, and demographic variables have measurable effects on a number of criterion measures including written message production and the effectiveness of written encoding. Regression models were obtained which provided the best psychological, stylistic, and demographic predictors of both written style and effectiveness of written encoding. The regression models accounted for as much as 56 percent of the variance in the criterion measures.

Findings were discussed in terms of the predictive ability of the models and the potential application of these models as screening measures. A number of research extensions, suggested by the findings of this investigation, were discussed.



## CHAPTER I

### INTRODUCTION

#### The Problem

Language can be regarded as a vehicle of personality as well as thought, and when a person encodes a message, he tells us not only about the world but also about himself. The skill with which the person encodes a message will figure prominently in how effectively the message will be perceived, but it is by no means the sole criterion for effective communication.

While verbal communication may present no particular problem for most people, written communication, or encoding a written message with the natural human speech, is a serious and arduous task for many. E. B. White (1966), essayist emeritus of the New Yorker, characterized this dilemma aptly:

If the writer is afraid of words, afraid of mistakes, afraid of rules or the reader who threatens to enforce them with a red pencil, then the genuine warmth of his feelings may grow cold, and his natural human speech may grow stiff with bookish correctness. (p. 8)

This writing dilemma has reached epidemic proportions nationwide in the past decade. In fact, the problem has become so acute that Newsweek devoted an entire issue to the inability of American college and high school students to write expository English with any real degree of structure and lucidity ("Why Johnny Can't Write," 1975). Newsweek interviewed many of the leading educational authorities and researchers in the country in an attempt to pinpoint the source of the problem.

The U. S. Department of Health, Education and Welfare disclosed the results of a special ten year study to Newsweek that showed an alarming erosion of reading skills among American students since 1965. There is no question in the minds of educators, Newsweek reports, that a student who cannot read with true comprehension will never learn to write well. The National Assessment of Educational Progress (NAEP) has been testing and evaluating the writing skills of Americans between the ages of nine and thirty-five since 1969. Their 1970 appraisal showed almost no mastery of basic writing mechanics in nine-year-olds, serious deficiencies in spelling, grammar, and structure in seventeen-year-olds, and a reluctance to write at all in persons over eighteen years of age. A 1976 update by the NAEP showed the situation to be even more grim than in 1970.

Among the chief causes for the erosion of writing skills suggested by the experts are the simplistic spoken style of television, a subtle shift in educational philosophy away from teaching expository writing to a more creative writing approach, and over-crowded classrooms which discourage teachers from making written assignments. Dr. Carlos Baker, chairman of the English department at Princeton University, emphasizes the opinion of many educators that a person just doesn't know anything unless he can write it. "Writing [Newsweek quotes Baker] forces students to examine the actual meaning of their words and the logic--or the lack of it--that leads from one statement to another" (p. 61).

American colleges and universities, Newsweek reports, are complaining that many of their most intelligent freshmen are seriously deficient in organizing their thoughts on paper. This seriously impedes prediction of continued success in higher education. Officials at graduate schools

of law, business, and journalism are increasingly reporting that the products of even the best colleges have failed to master the skills of written communication so crucial to their fields.

Although deficiencies in written communication are most often attributed to the factors illustrated in the Newsweek expose, additional variables are indeed plausible and probable. If one regards written communication as encoding natural human speech, then factors affecting linguistic transmission should also be investigated as potential mediators of written transmission. Speech communication research has determined that verbal message transmission will be affected by differing affective states of the source (Burgoon, 1970, pp. 264-268). As written communication is an extension of verbal communication, it seems likely that the affective state of the communicator will also affect the encoding of written messages. Similarly, since differing vocal patterns will affect decoding of verbal communication messages, differing stylistic patterns should also affect decoding of written messages.

There is some support in the literature for the importance of differing affective states in the written encoding process. Cognitive stress has been shown to be an important variable in written encoding situations. Osgood and Walker (1959) compared suicide notes with personal letters and found stylistic differences that they attributed to the affective state of the writer. Greenberg and Tannenbaum (1962) found that subjects under induced cognitive stress made more writing errors and produced less readable messages than did subjects in low stress conditions. Harper (1970) analyzed creativity literature and concluded that amount and perception of creativity played a significant role in successful writing. Goodman (1971) found intensity of reported task

dissatisfaction to be a mediating variable in successful writing. Davies and Mowbray (1968) and Pasqua (1969) reported that psychological dimensions are important correlates of written encoding performance.

While communication researchers in recent years have investigated objective correlates of syntactic counterparts in written communication messages (Lynch, 1970, p. 318), attempts to predict the style and quality of written encoding behavior have not been particularly fruitful (Pasqua, 1968; Shelly, 1971; Scott, 1972; and Miller, 1974). The purpose of this investigation was twofold: (1) to examine the effect of chronic psychological syndromes on written encoding behavior using the Omnibus Personality Inventory, and (2) to investigate ways in which effective written encoding performance can be predicted by use of psychological dimensions and stylistic indices.

#### The Omnibus Personality Inventory

The Omnibus Personality Inventory (OPI) was developed at the Berkeley Center for the Study of Higher Education to assess selected attitudes, values, and interests, mainly relevant in the areas of normal ego-functioning and intellectual activity. Nearly all dimensions included in the Inventory were chosen either for their particular relevance to academic activity or for their general importance in understanding and differentiating among students in an educational setting (Heist & Yonge, 1968).

The OPI represents a compilation of scales, assembled to accommodate particular measurement needs rather than a single theoretical framework, taken from the Minnesota Multiphasic Personality Inventory, the Minnesota T-S-E Introversion-Extroversion Inventory, the Vassar College

Attitude Inventory, and the California Psychological Inventory (Lake, Miles, & Earle, 1973, p. 49). In the area of ego-functioning, scales were included to assess general or social-emotional maturity, social concern, perception of self in relation to others, and the masculinity-femininity syndrome. Included under the domain of intellectual activity are scales assessing a person's interest in working with ideas and abstractions, level of theoretical orientation, and esthetic interests and sensitivities. To supplement these two domains, assessments of flexibility of general perception, degree of impulsivity, emotional disturbance, and anxiety were included due to their presumed relevance to the study of behavior in academic settings. These dimensions were the result of a principal components factor analysis based on a normative sample of 7283 college freshmen (Heist & Yonge, p. 53).

The conceptual basis for the OPI is predicated on the notion that a personality inventory grounded in one explicit theory of personality is overly restrictive, especially if the purpose of the inventory is to measure important characteristics of a variety of students enrolled in heterogeneous institutions of higher education. Therefore, primary consideration was given to the major attitudes, values, and interests which would, within the context of an eclectic set of principles, shed meaningful light on the variations among students and on changes in measured personality characteristics.

The theoretical bases of the OPI (Webster & Heist, 1959) encompassed the developmental nature of man and the social context in which current behavior occurs and growth and development take place. An individual, at any point in time, was assumed to be behaving in terms of the possibilities offered by his relevant immediate and remote past, as well as in

the context of present motives. This anchorage in previous experiences was seen as a major determinant of current thinking and activity in late adolescence (Heist & Yonge, p. 2). The home and family situation was logically regarded to be the setting of the greatest proportion of influential experiences. In addition, the course of one's further development and the possibility of change in one's perception were assumed to be closely related to significant experiences in the home, or the absence of such experiences.

Other theoretical concerns were the general social-cultural setting of late adolescence, and the particular milieu and cultures of academic institutions. Thus, attention was given to the dynamics of both academic and social involvement and to the relevant aspects of human behavior which could be influenced through a variety of on-campus experiences. The specific personality characteristics to be measured by the OPI were chiefly those of hypothesized relevance in a formal academic context.

The intended utilization of the OPI was as a measurement device for research investigations conducted at the Center for the Study of Higher Education in Berkeley. In most of these studies the OPI served three main functions: (1) to furnish certain criterion scores, as independent variables, for the identification and selection of "types" of students, (2) to provide a basis for differentiating among student "types" and groups and describing the composition of incoming students, and (3) to provide a basis for measuring change over one or more years in a number of non-intellectual characteristics (Heist & Yonge, p. 26).

For selection of or differentiation among students, the authors suggest that individual scales or clusters of scales can be used with an aim toward (1) assessing degrees or levels of intellectual

disposition and the particular emphasis in such a disposition, (2) assessing differences in major orientations of students, (3) measuring variations in impulsivity and flexibility, (4) providing cues for type and intensity of emotional disturbance, and (5) identifying persons who exhibit major correlates of creativity (p. 26).

The second major utilization of the OPI, counseling, came as an aftermath to the fundamental development of the scales. This application followed requests from members of the personnel management profession that the authors address themselves to the possible employment of the OPI as a diagnostic tool. Thus, the OPI can assist counselors in identifying the students' real interest in learning and academic pursuits, in understanding whether their motivation is intrinsic or extrinsic, and in understanding how students view or comprehend the variety of stimulation in their environment.

The possible utility of various scales in predictive research has been suggested as a third major utilization of the OPI, especially where the predicted criterion is grade point average or grades. This potential application has not been systematically pursued by researchers. This reflects an unwillingness to settle for grades as the major or only assessment of educational gains and an apprehension about the use of psychometric devices merely to predict or identify those who will succeed at different levels in existing educational systems.

However, the OPI has been applied as a predictive instrument with some degree of success in the past. Some researchers (Madison & Studdiford, 1963) have attempted to determine whether an additional increment of prediction variance might not be accounted for in the area of academic performance. More recently, Davies and Mowbray (1968) predicted success

in medical school based on OPI profile scores. Elton and Rose (1970) factor analyzed OPI scores for 530 college students and found both a masculine role and a scholarly orientation factor which served as successful predictors of occupational constancy and change. In a later research investigation, Elton and Rose (1974) predicted productivity for 2400 college freshmen using multiple regression analysis of OPI scores. They found that social extroversion, impulse expression, and estheticism were significant predictors of non-academic achievement.

In addition to being a comprehensive and widely applicable measurement tool for educational research and counseling, the OPI has been shown to be a reliable instrument. The Kuder-Richardson Formula 21 was employed for internal consistency measures on a sample of 7283 college freshmen. Reliability coefficients for the scales ranged from .67 to .89, with a median of .87 (Lake, Miles, & Earle, 1973, p. 197). Corrected split-half reliabilities for 400 freshmen at the University of California ranged from .65 to .91, with a median of .84. Test-retest reliabilities for three groups of students ranged from .79 to .95, with a median of .87 (time between test administrations was three to four weeks). A later study investigating the factor structure of the OPI (Elton & Terry, 1969) showed the instrument to be highly stable over a four-year-period.

Item overlap and scale intercorrelations of the OPI show substantial construct validity (Heist & Yonge, p. 50). Construct validity is further evidenced by the research studies reported below. Criterion-related validity coefficients vary in magnitude for the various scales of the OPI. Generally, the validity coefficients are no better or worse than for the antecedent inventories from which the OPI items were taken. Religious Liberalism, Estheticism, and Theoretical Orientation correlate .66, .61,



and .62, respectively, with these same scales on the Allport-Vernon-Lindzey Study of Values. Thinking Introversion correlates .54 with the Introversion-Extroversion scale of the Myers-Briggs Type Indicator, while Social Extroversion correlates -.63 with the Social Introversion measure of the MMPI. The Masculinity-Femininity scale correlates only -.16 for men and -.31 for women with the Femininity scale of the California Personality Inventory, but it correlates .72 with the same measure on the Strong Vocational Interest Blank. Personal Integration and Anxiety Level, other correlates of ego-functioning, correlate highly with the appropriate scales of the MMPI and the Myers-Briggs Type Indicator. These validity and reliability statistics show the OPI to be an appropriate instrument for assessment of intellectual activity and normal ego-functioning, the intended usages of the inventory.

In recent years, the OPI has experienced a wide and varied research application, which has expanded its utility and broadened its validity. One of the more frequently employed applications of the OPI has been the identification of certain student "types" on college campuses. It has been used to study characteristics of transfer students (Rose & Elton, 1970), commuter students (Chickering & Kuper, 1971), fraternity/sorority students (Elton & Rose, 1968), gifted students (Gottsdanker, 1968), Chinese-American students (Sue & Kirk, 1972), Japanese-American students (Sue & Kirk, 1973), students as intellectual campus leaders (Martin, 1970), and students in special curriculum programs (Kinsel & Latham, 1974; Morgan, 1972). In other campus-related investigations, the OPI has been used to study the residential mobility of college students (Mann, 1972), religious orientations of college entrants (McCormick, 1969), choice of residence housing (Alfret, 1968), suicide on campus

(Alfred, 1969), and the effects of work experience on college students (Elton & Rose, 1973).

In the field of personnel guidance and counseling, the OPI has been used to identify potential problem clients (Rose & Elton, 1972), to determine the types of students who will seek counseling (Sharp & Kirk, 1974), and to assist in directing students toward vocational goals (Lange, Woodburn, & Miller, 1974; Rose & Elton, 1971; Stewart, 1973). The OPI also has been used by counseling practitioners to investigate college attrition (Cope, 1968; Morgan, 1974) and attrition rates for special groups of college students (Athanasios, 1971; DeVecchio, 1972; Rose & Elton, 1971).

Attitude research has employed the OPI to investigate student attitudes toward the academic institution (Trent, 1970; Dienst, 1972), faculty attitudes toward students (Yonge, 1968), attitudes regarding intellectuality (Weissman, 1970), attitudes concerning different instructional modes (Pascal, 1973), and the effect of college on student attitudes (McConnell, 1972).

In a more clinical utilization, the OPI has been used to study the psychological dimensions of postconventional moral types (Sullivan & Quarter, 1972), creative students (Phillips, 1973; Trezise, 1966), students from low-income families (Elton, 1970), probationary students involved in counseling (Smith & Winterbottom, 1970), and students engaged in sensitivity training (Gilligan, 1973). In addition, anxiety (Mann, 1971) and environmental press and rigidity (Elton, 1971; Waggoner, 1972) have been investigated to determine their relative effects on maturational development in college students.

One final application of the OPI was to determine if experimental

title was a source of sampling bias in commonly used subject-pool procedures. Silverman and Margulis (1973) used the OPI to examine students who commonly volunteer for personality-related studies. They determined that these students are not representative of college students in general, much less of persons beyond the university community.

While communications research has investigated the effects of psychological variables in the communication process, the major thrust of these investigations has been centered primarily in the rhetorical domain. On the other hand, the use of stylistic analysis has been used extensively to study written message variables as they mediate the communication process.

### The Stylistic Indices

Stylistic analysis is one of the methodologies employed to study message variables in the communication process. Although stylistic analysis has an early historical origin (Gray & Leary, 1935; Lorge, 1939, 1944), it has not received the thorough and systematic treatment that other methodologies in message research have received (Lynch, 1970, p. 316). It has been just recently that message variables have been investigated systematically and with some theoretical foundation (Burgoon, Jones & Stewart, 1975).

Stylistic analysis measures the syntactic aspect, or how a particular communication message has been structured. The general procedure is to count such features of the message as punctuation units, parts of speech, word frequency, and characters, and to compute ratios on these counts. These ratios can then be used to compare individual writing styles or to predict judgmental responses to the message.

Stylistic analysis involves a relatively straight forward procedure (Lynch, 1970). The first step is the selection or development of a working judgmental measure for particular communication variables. For instance, in the work on source credibility, available standardized measures of comprehension were selected and used to develop various stylistic measures (c.f. Carbone, 1975). Next, stylistic attributes which correlate with and hence may be used as predictors of the variables being studied must be selected. These attributes can be either drawn from findings of prior statistical analyses (Lynch, Kent & Carlson, 1967; Tannenbaum & Lynch, 1962; Lynch, Nettleship & Carlson, 1968) on similar message variables or selected by intuition or subjective inspection. After a sample of messages has been selected, counts are made on the chosen attributes and ratios are computed for these counts. Finally, multiple regression analyses are applied to determine the best set of message attribute predictors and to generate regression equations which may be employed as an indirect measure of the judgmental variable.

The conceptual basis of stylistic analysis assumes that judgmental variables reside primarily in the mind of the communication recipient. A further assumption is that the communication may contain various syntactic correlates or counterparts which act as stimuli to evoke or elicit judgmental responses. When these correlates are used in regression analysis to generate correlate indices, indirect measurement of the judgmental variable is then possible. The possibility of objective correlates of syntactic counterparts in communication messages has been suggested by various scholars (Carroll, 1960, 1964; Eliot, 1955; Flesch, 1948, 1949, 1950, 1960).

Research investigating correlates of syntactic counterparts has

examined such variables as level of abstraction (Flesch, 1950), readability (Gray & Leary, 1935; Flesch, 1948, 1949, 1960), visual detail and sensationalism (Culbertson, 1974), human interest (Lynch, Kent & Carlson, 1967; Lynch, Nettleship & Carlson, 1968), and source credibility (Carbone, 1975). Other research employing stylistic analysis has attempted to predict reading difficulty for children (Lorge, 1939), to identify objective message correlates of sensationalism (Tannenbaum & Lynch, 1962), and to study the effects of creativity on journalistic performance (Lynch & Kays, 1967).

The primary aim in stylistic analysis is to identify clusters of message variables which may relate to and be predictive of judgmental factors, and which may be used to derive a regression equation for indirect measurement. Possible message attributes are almost infinite in number, so to count all possible attributes and compute all possible ratios would be practically impossible. However, some research has attempted to reduce the dimensions of message style.

Gray and Leary (1935) represent the first attempt to designate general stylistic constructs. After examining the intercorrelations among 44 stylistic variables measured on 48 passages, they selected the 24 which correlated substantially with comprehension and called them elements of reading difficulty. In a similar line of inquiry, Carroll (1960) obtained measurements on 29 semantic differential scales and 39 stylistic attributes on 150 written samples. From a factor analysis of this data, he isolated six general style factors: general stylistic evaluation, personal affect, ornamentation, abstractness, seriousness, and characterization. Tannenbaum and Lynch (1962) attempted to identify message correlates relating to sensationalism. Factor analysis yielded

a stylistic cluster (readability, punctuation, and degree of modification) which accounted for more than 60 percent of the variance in scores. When these three stylistic variables were manipulated in subsequent messages, 25 of 27 manipulations were as predicted.

Lynch and Kays (1967) succeeded in reducing the dimensions of message style with their finding that creativity is a structural rather than a content phenomenon. In examining the effects of creativity on journalistic performance, they found high creative types to use more syntactic dispersion, less lexical diversity, and to be more productive than low creative types. Finally, Lynch et al. (1968) submitted 26 stylistic measures to factor analysis and found four stylistic factors (complexity, emotiveness, lexical diversity, and personalism) which accounted for 53 percent of the variance in indirectly measuring human interest.

Although there are many different indices of written style, care must be exercised in choosing the ones most appropriate for the particular research objectives. Based on the research evidence cited above, the following stylistic factors and their respective measures seem appropriate for analysis of written encoding behaviors:

(1) An index of productivity with measures on total frequency of words and sentences. Productivity is a sensitive discriminator of creativity in writing (Lynch & Kays, 1967).

(2) An index of sentence length with measures on the ratio of total words to total sentences. Sentence length is a major correlate of comprehension (Flesch, 1948, 1949, 1950, 1960).

(3) An index of lexical diversity with measures on the type-token ratio (TTR), formed by dividing the total number of words into the

total number of different words. This index was originated independently by Zipf (1935) and by Johnson and Tuthill (1938). Lexical diversity is a major correlate of human interest in writing (Lynch et al., 1968).

(4) An index of redundancy with a measure on the ratio of function words (articles, prepositions, and conjunctions) per sentence. The use of function words is reduced when style matures (Lynch, 1962).

(5) An index of pausality with a measure on the ratio of internal punctuation to sentences. Pausality is a correlate of sensationalism in writing (Tannenbaum & Lynch, 1962).

(6) An index of emotiveness with measures on the modification ratio--the ratio of adjectives plus adverbs to nouns plus verbs. Emotiveness is a sensitive indicator of psychological stress (Osgood & Walker, 1959) and of sensationalism and human interest (Greenberg & Tannenbaum, 1962).

(7) An index of readability with a measure on the Gunning index of readability (see Gunning, 1952). Readability formulas such as those of Gray and Leary (1935), Gunning (1952), and Flesch (1948, 1949, 1960) are normally used to index the speed and ease of reading a particular written passage (Lynch, 1970).

#### The Relationship Between Stylistic Analysis and Psychological Attributes

There have been few attempts to specify the relationship between both written style and affective state in the written encoding process. There is some research to indicate that the affective state of the encoder will affect the written style of the message (Greenberg & Tannenbaum, 1962; Osgood & Walker, 1959), while other research has suggested that the affective state of the communicator plays a significant role in the overall communication process (Goodman, 1971; Harper,

1970). None of the research has demonstrated that a significant relationship exists between a number of stylistic variables and the psychological state of the communicator in the written encoding process.

It seems apparent that both stylistic and psychological variables will serve to mediate the written communication process and the impact of any given message. The outcome of written communication can be regarded as a judgmental concept, thus lending itself readily to stylistic analysis. Communication recipients will judge the impact of a written message based on such criteria as structure, comprehensibility, and readability.

Since both stylistic and psychological variables have been shown in independent studies to affect the written message, it is highly likely that both sets of variables will also affect the message simultaneously. It is within this communication context that these variables should be investigated, especially if one is concerned with the analysis of the written encoding process.

#### Rationale and Research Objectives

The research evidence summarized above leads to the following conclusions: (1) stylistic, psychological, and demographic variables have a measurable effect upon written message production, and (2) the effectiveness of written encoding can be predicted based upon these variables.

The research objectives of this investigation were as follows: (1) to determine both the independent and the joint effects of stylistic, psychological, and demographic variables on message production; (2) to develop a method for predicting effective written encoding by generating a regression equation using psychological affect, written style, and



demographics as criterion variables; and (3) to suggest a screening instrument for assessing the potential writing ability of applicants in various academic disciplines.

Both psychological and stylistic variables have been the major focus of much communication research. However, none of these investigations have established the causal relationships necessary to test these variables in experimental paradigms. Therefore, it was impossible to posit directional hypotheses for this investigation, since any attempt to do so would have been on a priori grounds.

## CHAPTER II

### METHODS AND PROCEDURES

#### Overview

The investigation employed a multiple regression paradigm to examine the degree of relationship between written encoding and various cognitive states and demographic factors. Subjects completed a background information sheet, a personality inventory, and a one-hour writing assignment. This information was obtained unobtrusively, as subjects were told that the information was required of all students as a normal requirement of the College of Journalism and Communications. The information was used to generate regression equations designed to provide predictors of writing style. Moreover, stylistic indices were used as predictors of quality judgments of written communication.

This chapter details the methods and procedures of the investigation. The chapter begins with a description of the subjects and procedures for data collection and scoring. This is followed by the operationalization of the experimental variables and the procedures for computing and checking the stylistic indices.

#### Subjects

Subjects (N=60) were undergraduates enrolled in the advanced newswriting class at the University of Florida, Fall 1975. All subjects completed the OPI and the background sheet during the second class

meeting. Writing samples were completed by the subjects during a writing lab three weeks later.

### Procedures

Data Collection. Subjects were asked to complete the OPI, Form F and the background information sheet (see Appendix A) during the second class meeting of the quarter. They were informed that this information was required of all students enrolled in the College to aid in obtaining student profiles. They were given one hour to complete the 385 true-false type items on the OPI and the demographic information on the background sheet. Oral instructions accompanied the background sheet to insure that all subjects responded to all items: name, age, sex, grade point average, major, typing speed, writing experience, and a five item bipolar adjective scale assessing attitude toward journalism writing.

During a normal lab session three weeks later, subjects were given a fact sheet containing the necessary information to write a news story concerning an automobile accident (see Appendix B). The writing exercise was assigned by the regular lab instructor as a normal class assignment. All subjects were given the identical fact sheet and wrote for exactly one hour. The fact sheet was specially prepared by the Department of Journalism faculty for use as a one-hour timed exercise.

Scoring. The OPI answer sheets were electronically scored by The Psychological Corporation, Minneapolis, Minnesota. Profiles were obtained with both raw and standard scores for the 13 dimensions measured by the OPI, Form F: thinking introversion, theoretical orientation, estheticism, impulse expression, autonomy, religious orientation, social extroversion, personal integration, anxiety, altruism, practical

outlook, masculinity/femininity, and response bias. In addition, each subject received a score based on a seven point scale measuring intellectual disposition.

### Experimental Variables

Cognitive. The cognitive variables entered into the regression analysis corresponded to the 13 measured attributes obtained from the OPI profiles. An additional cognitive variable, intellectual disposition, was included. The intellectual disposition category (IDC) is based on normative data from the Educational Testing Service, and is determined from overall performance on the OPI. Chronic affective state of the subjects was assumed to be that measured by the OPI scales.

Stylistic. The stylistic variables were obtained by computation of seven stylistic indices from the writing samples. Indices based on productivity, sentence length, lexical diversity, redundancy, pausality, emotiveness, and readability were computed and checked by eight trained raters. These indices were considered to be, respectively, measures of creativity, comprehension, human interest, maturity, sensationalism, emotiveness, and readability. The stylistic variables were entered into the regression analysis based on the computed indices. For example, the measure of lexical diversity for a given subject was based on the computed type-token ratio for that particular written passage.

Demographic. The demographic variables were obtained from subject responses to the background information sheets. The demographic variables included in the study were based on recommendations from the College of Journalism and Communications faculty on an a priori basis. These data were then entered into the regression analysis.

Written Performance. The quality of written performance was based on the grade received by each subject in the advanced newswriting class. The potential range of grades was zero to one hundred. Grades were assigned by the regular instructor and were based solely on written performance throughout the quarter. Specific criteria established and implemented by the College of Journalism and Communications faculty were used to assign numerical grades. Written performance was evaluated on the basis of such factors as general effectiveness, mechanics, factual accuracy, spelling, and editing practices. The numerical grade assigned to each subject was used as the criterion measure of written performance for the regression analyses.

#### Computation of Stylistic Indices

Eight graduate students in the Department of Speech were trained in three sessions to compute the stylistic indices from the writing samples and to systematically corroborate the results. Each indice was computed and corroborated by two different raters. Any lack of agreement by the raters was resolved by recounting until both raters reached agreement. In addition, a random selection of ten writing samples for each index was recomputed by the experimenter to check rater consistency. The seven stylistic indices were computed using the following procedures:

Productivity. The total number of words and the total number of sentences was counted for each writing sample.

Sentence Length. The ratio of words to sentences was computed for each writing sample by dividing the total number of words by the total number of sentences for each sample.

Lexical Diversity. The total number of different words used in

each writing sample was counted. The type-token ratio was computed by dividing the total number of words into the total number of different words.

Redundancy. The total number of function words--articles, prepositions, and conjunctions--was counted for each writing sample. The ratio of function words per sentence was computed.

Pausality. A count of the total internal punctuation used in each writing sample was made. The ratio of internal punctuation to total sentences in each writing sample was computed.

Emotiveness. Counts were made on the total number of adjectives, adverbs, verbs, and nouns for each writing sample. The modification ratio was calculated by computing the ratio of adjectives plus adverbs to nouns plus verbs.

Readability. The Gunning Readability Formula (Gunning, 1952) was used to gauge the readability of the writing samples: A 100 word sample was selected (first 100 words) for each writing sample. The average number of words per sentence was then computed. Next, a count was made of all words in the 100-word sample that were three syllables or more, skipping proper nouns, compounds made of two simple words, and words that grow to three syllables due to adding any verb ending (for instance, -ing or -ed). The average number of words per sentence and words of three syllables or more were then added. Finally, this total (average words per sentence and words of three or more syllables) was multiplied by .4, a factor verified by Gunning in extensive research. (A Gunning index of 12 means that the writing in question can be easily comprehended by anyone with less than 12 years of formal education, etc.)

## CHAPTER III

### RESULTS

Stepwise multiple regression analyses were employed to generate regression equations predicting performance on the two criterion variables of writing style and final grade. In the first analysis, the eight stylistic indices were regressed on standardized OPI scores. The second analysis employed the OPI standard scores, the stylistic indices, and a combination of both sets of variables as the predictors of grade. In supplementary analyses, psychological and demographic variables served as predictors of writing style, while stylistic, psychological, and demographic variables were used to predict grade.

All regression analyses employed the maximum  $R^2$  improvement technique. This procedure selects the best combination of predictor variables producing the highest  $R^2$  statistic (Barr & Goodnight, 1972, p. 128). The research objectives of this investigation were best served by accounting for the maximum possible amount of variance in the dependent variables. In addition, this procedure combines the best features of both the forward selection and backward elimination techniques, and such a method is desirable for multivariate research (Kerlinger & Pedhazur, 1973, p. 290). Another associative advantage of this technique is that it will not permit a variable already in the model to remain if its usefulness is diminished by variables entering at subsequent stages of the analysis.

Initially, the criterion selected for choosing the best solution for each model was the significance test for increment in  $R^2$  (Kerlinger & Pedhazur, p. 206). This method proved to be too restrictive for an exploratory study since a minimum increment of 4.64 percent was necessary for each subsequent model to achieve statistical significance. Application of this criterion would have resulted in selecting as the best model solutions accounting for less than five percent of the total variance. Therefore, the solution selected as the best model was the one which accounted for the most total variance, achieved statistical significance, and increased by two percent the amount of variance accounted for by the previous model.

Descriptive statistics were also obtained in addition to the regression coefficients. Mean statistics are reported in Appendix C, while the correlations among the variables are reported in Appendix D. Included with the tabular presentation of all regression coefficients are the F-ratios indicating whether each independent variable is statistically significant when entered last into each model.

### Stylistic Indices

The regression analyses for the eight dependent variables of writing style yielded significant models ( $p < .05$ ) for five of the indices and two models ( $p < .10$ ) that approached significance. Both models approaching significance (see Tables 1 and 2) were four variable solutions accounting for 13 percent of the variance. The five models that achieved significance (see Tables 3-7) accounted for a low of 17 percent and a high of 31 percent of the variance. The models ranged from five variable to ten variable solutions. The regression for the dependent variable GF did not yield significant psychological predictors.



TABLE I  
Regression of TOTW on OPI Scales

	<u>DF</u>	<u>MS</u>	<u>F</u>	<u>P</u>	<u>R<sup>2</sup></u>
Due to Regression	4	10,619.45	2.3	<.10	.13
Due to Error	60	4,624.10			
Total	64				
	<u>B</u>	<u>F</u>	<u>P</u>		
Intercept	-323.96				
TI	4.90	4.02	.05		
RO	1.92	3.90	.09		
SE	1.73	3.45	.07		
IDC	27.01	3.12	.08		

TABLE 2  
Regression of TOTS on OPI Scales

	<u>DF</u>	<u>MS</u>	<u>F</u>	<u>P</u>	<u>R<sup>2</sup></u>
Due to Regression	4	33.15	2.15	<.10	.13
Due to Error	60	15.39			
Total	64				
	<u>B</u>	<u>F</u>	<u>P</u>		
Intercept	-4.61				
TI	0.12	2.83	.10		
RO	0.07	1.17	.28		
SE	0.08	2.20	.14		
MF	0.09	2.36	.13		

TABLE 3  
Regression of TTR on OPI Scales

	<u>DF</u>	<u>MS</u>	<u>F</u>	<u>P</u>	<u>R<sup>2</sup></u>
Due to Regression	8	46.98	2.44	<.05	.26
Due to Error	56	19.29			
Total	64				
	<u>B</u>	<u>F</u>	<u>P</u>		
Intercept	34.95				
TI	0.19	2.12	.15		
ES	-0.12	1.59	.21		
CO	0.32	11.23	.001		
SE	0.11	2.12	.15		
PI	0.26	5.82	.02		
AL	-0.21	5.96	.02		
AM	-0.22	5.07	.03		
PO	0.18	2.70	.11		

TABLE 4  
Regression of RED on OPI Scales

	<u>DF</u>	<u>MS</u>	<u>F</u>	<u>P</u>	<u>R<sup>2</sup></u>
Due to Regression	10	2.63	2.44	<.05	.31
Due to Error	54	1.08			
Total	64				
	<u>B</u>	<u>F</u>	<u>P</u>		
Intercept	-1.07				
ES	0.06	8.14	.006		
CO	-0.04	2.82	.10		
AU	0.06	5.38	.02		
RO	-0.01	0.30	.59		
SE	0.05	5.35	.02		
IE	-0.06	5.55	.02		
PI	-0.08	6.77	.01		
AL	0.04	3.95	.05		
PO	0.06	4.54	.04		
MF	0.04	2.07	.16		

TABLE 5  
Regression of PAUS on OPI Scales

	<u>DF</u>	<u>MS</u>	<u>F</u>	<u>P</u>	<u>R<sup>2</sup></u>
Due to Regression	6	1.81	2.38	<.05	.20
Due to Error	58	.76			
Total	64				
	<u>B</u>	<u>F</u>	<u>P</u>		
Intercept	3.93				
CO	-0.04	5.26	.03		
AU	0.05	8.44	.01		
SE	0.04	9.04	.004		
IE	-0.03	2.39	.13		
PI	-0.06	6.72	.01		
AL	0.01	1.26	.27		

TABLE 6  
Regression of EMOTION on OPI Scales

	<u>DF</u>	<u>MS</u>	<u>F</u>	<u>P</u>	<u>R<sup>2</sup></u>
Due to Regression	5	.01	3.07	<.05	.21
Due to Error	59	.01			
Total	64				
	<u>B</u>	<u>F</u>	<u>P</u>		
Intercept	0.11				
CO	0.002	2.76	.10		
SE	0.002	6.15	.02		
IE	-0.003	8.44	.01		
PO	0.003	5.53	.02		
MF	-0.002	3.53	.07		

TABLE 7  
Regression of SL on OPI Scales

	<u>DF</u>	<u>MS</u>	<u>F</u>	<u>P</u>	<u>R<sup>2</sup></u>
Due to Regression	5	25.04	2.35	<.05	.17
Due to Error	59	10.68			
Total	64				
	<u>B</u>	<u>F</u>	<u>P</u>		
Intercept	8.55				
AU	0.19	6.76	.01		
SE	0.15	6.30	.01		
IE	-0.15	5.47	.02		
PI	-0.15	6.30	.01		
PO	0.20	7.93	.01		

### Grade

All three models for the dependent variable of grade achieved statistical significance ( $p < .05$ ). The regression of grade on both psychological and stylistic predictors yielded a twelve variable solution accounting for 40 percent of the variance (see Table 8). A three variable solution accounting for 12 percent of the variance was obtained for the regression of grade on the eight stylistic indices (see Table 9). The regression of grade on the OPI standard scores produced a five variable model accounting for 23 percent of the variance (see Table 10).

### Supplementary Analyses

In addition to the analyses of psychological and stylistic correlates of written encoding behavior, analyses were performed on demographic variables in the written encoding process. Grade was regressed on psychological, stylistic, and demographic variables, while the stylistic indices were regressed on both psychological and demographic variables. Significant models ( $p < .05$ ) were obtained for all solutions except for the dependent variable of total sentences.

The regression for the dependent variable of grade yielded a thirteen variable model accounting for 56 percent of the variance (see Table 11). One variable to ten variable solutions were obtained for the seven stylistic indices. The variance accounted for ranged from a low of 7 percent to a high of 42 percent. The regression analyses are reported in Tables 12-18.



TABLE 8  
Regression of GRADE on OPI Scales  
and Stylistic Indices

	<u>DF</u>	<u>MS</u>	<u>F</u>	<u>P</u>	<u>R<sup>2</sup></u>
Due to Regression	12	204.56	2.83	<.05	.40
Due to Error	52	72.27			
Total	64				
	<u>B</u>	<u>F</u>	<u>P</u>		
Intercept	89.20				
TOTW	-0.11	5.23	.01		
TOTS	2.24	6.49	.01		
TTR	0.44	3.33	.07		
RED	3.70	6.13	.02		
PAUS	1.58	1.03	.32		
GF	0.79	2.28	.14		
CO	-0.32	2.90	.09		
RO	-0.35	5.51	.02		
SE	-0.41	7.57	.01		
PI	0.27	2.90	.09		
MF	-0.31	3.52	.07		
IDC	-3.61	8.18	.01		

TABLE 9  
Regression of GRADE on Stylistic Indices

	<u>DF</u>	<u>MS</u>	<u>F</u>	<u>P</u>	<u>R<sup>2</sup></u>
Due to Regression	3	244.29	2.72	<.05	.12
Due to Error	61	89.84			
Total	64				
	<u>B</u>	<u>F</u>	<u>P</u>		
Intercept	60.10				
TTR	0.29	1.32	.25		
RED	4.54	7.49	.01		
SL	-1.15	4.34	.04		

TABLE 10  
Regression of GRADE on OPI Scales

	<u>DF</u>	<u>MS</u>	<u>F</u>	<u>P</u>	<u>R<sup>2</sup></u>
Due to Regression	5	282.21	3.47	<.05	.23
Due to Error	59	81.39			
Total	64				
	<u>B</u>	<u>F</u>	<u>P</u>		
Intercept	108.61				
TI	0.38	1.26	.27		
CO	-0.36	3.85	.05		
RO	-0.29	3.71	.06		
SE	-0.15	1.42	.24		
IDC	-2.41	0.99	.32		

TABLE II  
Regression of GRADE on OPI Scales, Stylistic Indices,  
and Demographic Variables

	<u>DF</u>	<u>MS</u>	<u>F</u>	<u>P</u>	<u>R<sup>2</sup></u>
Due to Regression	13	191.93	3.85	<.05	.56
Due to Error	40	49.83			
Total	53				
	<u>B</u>	<u>F</u>	<u>P</u>		
Intercept	-23.01				
TI	0.98	7.95	.001		
IE	-0.47	11.07	.21		
AM	-0.22	2.23	.002		
MF	-0.28	2.59	.18		
IDC	5.22	6.59	.09		
TTR	0.46	4.32	.01		
TOTW	-0.23	7.89	.04		
TOTS	4.66	8.37	.01		
SL	2.40	5.14	.01		
RED	3.87	6.40	.05		
AGE	-0.87	17.77	.01		
SEX	-4.02	2.11	.09		
TYPING	0.15	2.47	.10		

TABLE 12  
Regression of TTR on OPI Scales and Demographic Variables

	<u>DF</u>	<u>MS</u>	<u>F</u>	<u>P</u>	<u>R<sup>2</sup></u>
Due to Regression	1	93.42	4.17	<.05	.07
Due to Error	52	22.41			
Total	53				
	<u>B</u>	<u>F</u>	<u>P</u>		
Intercept	52.24				
CO	0.16	4.17	.05		

TABLE 13  
Regression of TOTW on OPI Scales and Demographic Variables

	<u>DF</u>	<u>MS</u>	<u>F</u>	<u>P</u>	<u>R<sup>2</sup></u>
Due to Regression	6	9720.82	2.43	<.05	.24
Due to Error	47	4002.26			
Total	53				
	<u>B</u>	<u>F</u>	<u>P</u>		
Intercept	-129.66				
AU	-2.97	2.98	.09		
RO	2.97	4.11	.05		
SE	2.33	5.92	.02		
MF	1.01	0.83	.37		
AGE	2.30	3.48	.07		
GPA	53.00	6.57	.01		

TABLE 14  
Regression of PAUS on OPI Scales and Demographic Variables

	<u>DF</u>	<u>MS</u>	<u>F</u>	<u>P</u>	<u>R<sup>2</sup></u>
Due to Regression	10	1.94	3.06	<.05	.42
Due to Error	43	.63			
Total	53				
	<u>B</u>	<u>F</u>	<u>P</u>		
Intercept	2.25				
ES	-0.02	1.10	.30		
CO	-0.04	3.46	.07		
SE	0.03	3.76	.06		
PI	-0.05	4.74	.04		
AL	0.03	1.78	.19		
PO	-0.02	1.30	.26		
AGE	0.03	1.38	.25		
GPA	0.70	7.63	.01		
JM 201	0.33	1.11	.30		

TABLE 15  
Regression of SL on OPI Scales and Demographic Variables

	<u>DF</u>	<u>MS</u>	<u>F</u>	<u>P</u>	<u>R<sup>2</sup></u>
Due to Regression	7	29.54	3.58	<.05	.35
Due to Error	46	8.24			
Total	53				
	<u>B</u>	<u>F</u>	<u>P</u>		
Intercept	0.06				
TO	0.09	1.82	.18		
IDC	0.60	1.45	.23		
AGE	0.23	9.44	.004		
SEX	1.78	3.59	.06		
GPA	1.41	2.33	.13		
JM 201	2.02	3.57	.07		
TYPING	-0.06	3.07	.09		



TABLE 16  
Regression of RED on OPI Scales and Demographic Variables

	<u>DF</u>	<u>MS</u>	<u>F</u>	<u>P</u>	<u>R<sup>2</sup></u>
Due to Regression	7	3.42	4.49	<.05	.41
Due to Error	46	0.76			
Total	53				
	<u>B</u>	<u>F</u>	<u>P</u>		
Intercept	1.44				
T0	0.02	1.27	.26		
ES	0.03	2.95	.09		
C0	-0.06	11.76	.001		
PI	-0.04	4.15	.47		
AL	0.06	7.26	.01		
AGE	0.04	2.71	.11		
GPA	0.81	9.56	.003		

TABLE 17  
Regression of EMOTION on OPI Scales and Demographic Variables

	<u>DF</u>	<u>MS</u>	<u>F</u>	<u>P</u>	<u>R<sup>2</sup></u>
Due to Regression	10	.009	2.74	<.05	.39
Due to Error	43	.003			
Total	53				
	<u>B</u>	<u>F</u>	<u>P</u>		
Intercept	-0.02				
TI	0.003	3.46	.07		
CO	0.003	4.81	.03		
AU	-0.002	1.92	.17		
SE	0.002	1.89	.18		
IE	-0.003	6.13	.02		
AM	-0.002	1.21	.28		
PO	0.002	1.17	.29		
AGE	0.005	10.06	.003		
SEX	0.028	2.46	.12		
TYPING	-0.001	1.06	.31		

TABLE 18  
Regression of GF on OPI Scales and Demographic Variables

	<u>DF</u>	<u>MS</u>	<u>F</u>	<u>P</u>	<u>R<sup>2</sup></u>
Due to Regression	5	11.37	2.49	<.05	.21
Due to Error	48	4.57			
Total	53				
	<u>B</u>	<u>F</u>	<u>P</u>		
Intercept	4.21				
TO	0.06	1.68	.20		
PO	-0.07	1.78	.19		
IDC	1.06	7.37	.01		
AGE	-0.10	3.52	.07		
GPA	1.48	5.29	.03		

## CHAPTER IV

### DISCUSSION

Both psychological and stylistic variables have been investigated extensively in numerous communication paradigms. These kinds of variables have been measured and manipulated in various experimental contexts to determine effects on informative and persuasive discourse. However, there have been few attempts to specify the relationship between both psychological state and measures of style in the written encoding process. This study was an attempt to specify such a relationship. The research objectives of this investigation were as follows: (1) to determine both the joint and independent effects of stylistic, psychological, and demographic variables on written message production; (2) to develop a method for predicting effective written encoding by generating regression equations using psychological predisposition, written style, and demographic variables as criterion measures; and (3) to suggest a screening instrument for assessing the potential writing ability of applicants in various academic disciplines.

The results of the stepwise regression analyses indicated that stylistic, psychological, and demographic variables have measurable effects on a number of criterion variables including written message production, and effectiveness of written encoding behavior. Twenty regression analyses were performed using grade and writing style as criterion measures. The predictor variables for these analyses were

psychological state, writing style, and demographic information. Sixteen models which were significant and two models which approached significance were obtained.

### Written Performance

Using grade as an empirical indicator of effective written encoding, the best model employing stylistic factors was a three variable solution. Lexical diversity, redundancy, and sentence length accounted for 12 percent of the variance in grade. Lexical diversity and redundancy, major correlates of human interest and maturity of written style, were positively correlated with grade, while sentence length was negatively correlated with the criterion measure. Maturity of written style achieved the highest loading and was the single best stylistic indicator of effective written performance.

The amount of variance accounted for in grade was increased to 23 percent by employing psychological indicators. A five variable model using thinking introversion, complexity, religious orientation, social extroversion, and intellectual disposition provided the best psychological predictors of grade. All variables were negatively correlated with grade except thinking introversion. The direction of these loadings is not surprising in light of introspective and solitary nature of the writing process. The intellectual disposition category, an indicator of intrinsic intellectual interest, was the single best psychological indicator of effective written performance. A low score on this scale is interpreted as a lack of intrinsic intellectual disposition. The high negative loading on this variable indicates that effective writing performance is probably a means to an end, rather than an intrinsic satisfaction gained from some acquisition of knowledge or skill.

A model combining both psychological and stylistic variables further increased the variance accounted for in grade to 40 percent. A twelve variable solution was generated using total words, total sentences, type-token ratio, redundancy, pausality, readability, complexity, religious orientation, social extroversion, personal integration, masculinity/femininity, and intellectual disposition. Total words, complexity, religious orientation, social extroversion, masculinity/femininity, social and esthetic inclinations and intellectual disposition were the variables inversely related to grade. Pausality, total words and sentences, and the Gunning index are major correlates of sensationalism, readability, and productivity. The negative loading on total words was expected since verbosity is normally associated with poor writing technique. The inverse relationship between masculinity/femininity and grade supports the contention that effective writing requires a certain finesse and predilection normally associated with highly esthetic people. As in the previous models, redundancy and intellectual disposition proved to be the single best stylistic and psychological predictors of grade. This finding indicates that effective writing is best characterized by a mature writing style and a healthy disposition towards writing as an intellectual pursuit. The positive correlation of readability accompanied by the negative correlation of complexity with grade is consistent with generally held notions of effective writing behavior.

The best model found for predicting grade based on psychological, stylistic, and demographic variables, accounted for 56 percent of the variance. This thirteen variable solution yielded as the best predictors of grade thinking introversion, impulse expression, altruism, masculinity/femininity, intellectual disposition, lexical diversity, total words,

total sentences, redundancy, sentence length, age, sex, and typing speed. Thinking introversion, lexical diversity, total sentences, sentence length, redundancy, and typing speed were the variables positively related to grade. The direction and loadings of the psychological and stylistic variables were consistent with previous models. The negative loading on age indicates that the younger students in the sample were the better writers. This could be explained by the fact that younger students have had consistent exposure to writing due to relatively uninterrupted academic pursuits. However, care must be exercised in the interpretation of this finding since the range, skewed toward young people, was inflated by two students over age 55 in the sample. Since sex was coded and entered into the regression analyses as a dummy variable, the negative loading indicates that males were the more effective writers. Moreover, since the masculinity/femininity variable in this model was inversely related to grade, the sex variable should be interpreted to indicate that males with esthetic qualities tended to produce better writing samples. As expected, typing speed was found to be a positive correlate of written performance but probably has limited utility given the stated purposes of this study.

Based on this investigation, certain variables appear to be highly indicative of effective written performance. A prescriptive model might suggest writing with both a mature writing style and a creative flair. Human interest should be developed through lexical diversity, and the script should utilize a greater number of sentences which are relatively short in length. Effective writing is facilitated by a liking for reflective thought and academic activities, a low tolerance for ambiguities, an active imagination, an interest in esthetic matters, and a predisposition toward sensitivity.

### Writing Style

Two models were generated predicting productivity, with measures on total words and total sentences, based on psychological indicators. Both models were four variable solutions accounting for 13 percent of the variance on productivity. Thinking introversion, religious orientation, and social extroversion were all positively correlated with productivity in both models. The model using total words as the index of productivity contained intellectual disposition as the fourth predictor variable. The model using total sentences as an index of productivity employed masculinity/femininity as the fourth predictor variable. Both of these variables were positively correlated with productivity. Since both of these models only approached significance, discretion should be used if the findings are to be interpreted. Of the two models, productivity as measured by total words appeared to be the better discriminator on the basis of substantially higher loadings. A third model was generated predicting productivity with measures on total words based on a combination of psychological and demographic variables. This six variable solution increased the amount of variance accounted for in productivity to 24 percent. Autonomy, religious orientation, social extroversion, masculinity/femininity, age, and grade point average were the best predictor variables. All predictor variables were positively correlated with productivity except autonomy. The only apparent explanation for this finding appears to be that persons who are more dependent might feel a need to explain themselves in more detail. Future research should investigate this variable for a possible curvilinear relationship with productivity. For example, up to a certain level of dependence, autonomy may be positively related to productivity, but an



increase of autonomy from this level could have a negative effect on productivity. Grade point average had an extremely high loading and was the single best predictor of productivity. This is consistent with the notion that high academic achievers are usually very productive individuals.

Human interest, measured by the type-token ratio, was best predicted using psychological factors with an eight variable model. Thinking introversion, estheticism, complexity, social extroversion, personal integration, anxiety level, altruism, and practical outlook accounted for 26 percent of the variance in human interest. Lexical diversity, measured by the type-token ratio, is a major correlate of human interest in writing. Estheticism, anxiety level, and altruism were the variables inversely related to human interest. The negative loading for altruism is not surprising since writing frequently requires a distant and impersonal perspective. However, the negative loadings on anxiety and estheticism were not expected. Since a low score on the OPI anxiety scale indicates expressed anxiety toward social adjustment, effective writing appears to be correlated with high anxiety. Again, a curvilinear relationship could be in effect such that moderate anxiety is a motivating factor in effective writing. The estheticism factor should be submitted to appropriate non-linear analyses before any attempt is made to explain this finding. The positive direction and loadings for the remaining variables indicate that a healthy personal outlook is a facilitating factor in creating human interest. The model obtained using both psychological and demographic variables to predict human interest accounted for only seven percent of the variance. A one variable solution resulted with no demographic variables entering the

model. Complexity was the sole predictor of human interest. The loading indicated that human interest is better achieved through less complex writing.

The best model for predicting maturity of written style, using measures on redundancy of function words (articles, prepositions, and conjunctions), was a ten variable solution accounting for 31 percent of the variance. The best psychological predictors of maturity of written style were estheticism, complexity, autonomy, religious orientation, social extroversion, impulse expression, personal integration, anxiety level, practical outlook, and masculinity/femininity. Complexity, religious orientation, impulse expression, and personal integration were negatively correlated with maturity of written style. All other variables were positively related to the criterion measure. The loadings on all variables were relatively uniform and the directions were as expected. Based on these variables, the writer displaying a maturity of written style can be characterized by an attention to detail, an esthetic interest, a conservative viewpoint, and independent work habits. The combination of psychological and demographic variables yielded a seven variable solution accounting for 41 percent of the variance in redundancy. The psychological predictors were consistent with the previous model. Age and grade point average were both positively correlated with the criterion variable. Grade point average provided the single best predictor of maturity of written style. This supports the contention that high academic achievers approach their work in a mature fashion.

Sensationalism, with measures on pausality or internal punctuation, was best predicted using psychological factors in a six variable model.

Complexity, autonomy, social extroversion, impulse expression, personal integration, and anxiety level accounted for 20 percent of the variance in sensationalism. Complexity, impulse expression, and personal integration had negative loadings. The negative loadings on complexity and impulse expression were not surprising and are consistent with previous research. The negative loading on personal integration indicates that sensationalism in writing could be an expression of feelings of isolation. This is not surprising due to the solitary nature of the writing task. The beta weights for all variables were approximately equivalent in magnitude. When psychological and demographic variables were employed to predict sensationalism, the amount of variance accounted for was increased to 42 percent. The ten variable solution included estheticism, complexity, autonomy, social extroversion, personal integration, anxiety level, practical outlook, age, grade point average, and previous exposure to the basic newswriting course. Estheticism, complexity, personal integration, and practical outlook received negative loadings, as expected. The remaining psychological variables received minimal loadings and were not considered to be discriminant predictors. Grade point average had the highest loading and was the single best predictor of sensationalism in writing.

The best model for predicting emotiveness, based on psychological factors, was a five variable model accounting for 21 percent of the variance. Complexity, social extroversion, impulse expression, practical outlook, and masculinity/femininity were the best predictor variables. The loading on all variables was relatively uniform, with impulse expression and masculinity/femininity loading in the negative direction. The negative correlation of masculinity/femininity indicates that high

levels of estheticism produce more emotiveness in writing. The combination of psychological and demographic variables increased the prediction of emotiveness to 39 percent. A ten variable solution was generated using thinking introversion, complexity, autonomy, social extroversion, impulse expression, altruism, practical outlook, age, sex, and typing speed as the predictor variables. All loadings were in the positive direction except autonomy, impulse expression, altruism, and typing speed. Although the beta weights for all variables were uniform in magnitude, age was the single best predictor of emotiveness. This interpretation was based on the high F-ratio and resulting probability level for age. It could be argued on the basis of this finding that emotiveness is facilitated through the maturity and varied experience that usually results from older age.

Comprehension, with measures on sentence length, was best predicted using psychological factors in a five variable model. Autonomy, social extroversion, impulse expression, personal integration, and practical outlook accounted for 17 percent of the variance in comprehension. Impulse expression and personal integration were inversely related to comprehension, as expected. The remaining variables were consistent with previous findings and had uniform loadings. The amount of variance accounted for was increased to 35 percent by using a combination of psychological and demographic variables. This seven variable solution employed theoretical orientation, intellectual disposition, age, sex, grade point average, previous exposure to the basic newswriting course, and typing speed as predictors of comprehension. All variables were positively correlated with the criterion except typing speed. The remaining demographic variables proved to be the most effective predictors

of comprehension. Previous writing experience and academic performance appear to enhance comprehension in writing. The results indicate that females produce more comprehensible writing than do males. The data also would lead to the conclusion that highly effeminate males tend to be more explicit in their writing.

The use of psychological variables did not yield a significant model for predicting readability in written encoding. However, a combination of psychological and demographic factors yielded a five variable model accounting for 21 percent of the variance in readability. Theoretical orientation, practical outlook, intellectual disposition, age, and grade point average were found to be the best predictors of readability, as measured by the Gunning index. Academic achievement was the single best predictor of readability. All variables were positively correlated except practical outlook and age. The negative loadings indicate that younger people with higher order principles in life will produce writing which is more readable. The high loading on intellectual disposition is consistent with the notion that readable writing may result from academic ability and attention to the specific audience.

### Research Implications

The use of psychological, stylistic, and demographic variables offers great potential for accurately predicting effective written encoding behavior. Specific predictor variables identified in this research should be further investigated through trend analysis to determine their precise relationship to effective written behavior and writing style. Moreover, the models identified through this research should be

cross validated on diverse samples to determine their utility for successfully screening applicants in various academic disciplines.

A screening instrument must be both valid and reliable to be of any practical utility. The suggested application of these regression equations will determine how accurately effective written encoding performance can be predicted. An ancillary criterion for an effective screening instrument is that it be easily administered. Future investigations may wish to examine the feasibility of generating models employing fewer predictor variables. Stepwise multiple regression analysis employing the maximum  $R^2$  improvement technique appears to be the most promising approach. This would provide a screening instrument which would take less time to administer and be easier to score. The user must decide whether to sacrifice a degree of accuracy for ease and rapidity of scoring.

One final implication is suggested for utilization of these models as a potential screening device. Since the OPI is a compilation of psychological scales taken from various personality instruments, a test battery could be assembled using those scales measuring the attributes identified in this research as being highly correlated with effective written performance. Scales measuring theoretical orientation, intellectual disposition, autonomy, impulse expression, and practical outlook should be included in such a test battery. This truncated assessment of psychological variables, coupled with the assessment of stylistic and demographic variables, would provide a more accurate and less cumbersome screening device than using a model with fewer predictors.

There may be limitations in this study due to the highly structured task of writing a newspaper story. This might limit the generalizability

of the results since only one specific message was encoded for a highly structured situation. Future research utilizing these models should collect various types of written samples from the same people and from different people.

A particularly promising area for future investigation is the use of additional demographic variables for predicting effective written encoding behavior. Preliminary regression analyses yielded two models which both accounted for over 85 percent of the variance in grade. The first model employed autonomy, impulse expression, productivity, redundancy, newspaper and school staff experience, and attitudes concerning the ease and excitement toward writing as predictor variables. The second model used autonomy, religious orientation, impulse expression, productivity, redundancy, readability, sex, journalism and overall grade point average, attitudes concerning the ease and excitement toward newspaper writing, typing speed, and experience as a parttime newspaper writer. Many of the subjects did not complete the background items assessing previous writing experience and attitudes toward writing, which lowered the total number of subjects to 22 for these regression runs. One would normally expect such a small sample size to decrease the statistical power of the model significantly. However, both models were significant in spite of the relatively small sample size. This indicates that the predictive power of these models is enormous, since a large percent of the variance in the dependent variable was accounted for. In spite of the apparently high predictive power of these models, they cannot be regarded as stable predictors of the criterion measure. In both cases, the degrees of freedom for regression were substantially lower than the degrees of freedom for error; this is not surprising in

light of the small sample size. Due to the larger number of degrees of freedom in the error term than in the regression term, there are major problems in interpreting the data. Great caution must be exercised in any interpretation of such an unstable statistic. Therefore replication of these findings using a larger sample size is mandated to establish the stability of these models.

### Summary

Research has generally demonstrated that the psychological state of the encoder will affect both the written style and the impact of a given communication message. However, there have been few attempts to specify the precise relationship between written style and psychological state in the written encoding process. This investigation was an attempt to specify such a relationship.

Stepwise multiple regression analyses were employed to generate regression equations predicting performance on the two criterion measures of writing style and final grade. Standardized OPI scores were used to predict performance on eight separate stylistic indices. In addition, OPI standardized scores, eight stylistic indices, and a combination of both sets of variables were employed as predictors of final grade in an advanced writing course.

The findings indicated that stylistic, psychological, and demographic variables have significant measurable effects on a number of criterion measures including written message production and effectiveness of written encoding. Regression models were obtained which provide the best psychological, stylistic, and demographic predictors of both written style and effectiveness of written encoding. The interpreted



regression models accounted for as much as 56 percent of the variance in the criterion measures.

Findings were discussed in terms of the predictive ability of the models, and the potential application of these models as a screening instrument. A number of research extensions suggested by the results of this study were discussed.

APPENDIX A  
BACKGROUND INFORMATION SHEET

1. Name: \_\_\_\_\_
2. Age: \_\_\_\_\_ Sex: \_\_\_\_\_
3. Grade Point Average: (estimate if necessary) \_\_\_\_\_
4. Major: (check one)
 

Journalism: \_\_\_\_\_ PR: \_\_\_\_\_ ADV: \_\_\_\_\_ BR: \_\_\_\_\_  
   \_\_\_\_\_ reporting  
   \_\_\_\_\_ news-ed  
   \_\_\_\_\_ photo  
   \_\_\_\_\_ urban affairs  
   \_\_\_\_\_ jm education
5. Minor: \_\_\_\_\_ Undecided: \_\_\_\_\_
6. Did you take the beginning news writing course (JM 201)?
 

\_\_\_\_\_ yes                      \_\_\_\_\_ grade  
 \_\_\_\_\_ no
7. Professional writing experience: (in months)
 

\_\_\_\_\_ newspaper staff  
 \_\_\_\_\_ stringer  
 \_\_\_\_\_ school publications  
 \_\_\_\_\_ other: (please explain) \_\_\_\_\_
8. Rate how you feel about newspaper writing:
 

easy	_____	_____	_____	_____	_____	_____	_____	difficult
boring	_____	_____	_____	_____	_____	_____	_____	exciting
unpleasant	_____	_____	_____	_____	_____	_____	_____	pleasant
shallow	_____	_____	_____	_____	_____	_____	_____	challenging
routine	_____	_____	_____	_____	_____	_____	_____	creative
9. Typing ability: \_\_\_\_\_ words per minute

APPENDIX B  
FACT SHEET FOR NEWS STORY

At 9 p.m. you are at the police station. A call comes in over the short wave radio, saying there has been an accident at the west end of the Commerce Street Bridge over the Ireland River, and requesting an ambulance. The call comes from a prowl car driven by Officer William E. Comstock.

You go to the bridge, find an open car, badly smashed up, against the south concrete rail of the bridge about 30 feet from the west end. It is faced toward town.

A crowd has gathered. An injured man is lying unconscious on the walk in front of the car. He is a young man with blond hair, bleeding badly from a gash in his head.

You ask everyone in the crowd what happened and finally find a man who says he was driving his own car north on Riverside Drive, approaching the bridge, and saw the lights of this car come south down Riverside Drive, going too fast. It skidded at the turn and crashed into the rail. He says:

"I didn't really see it but I heard it. I drove up to the stop sign and parked and got out and ran to the car. The driver was practically out of the car, hanging halfway over the bridge rail. I thought he was dead. I ran back to my own car and just then the police car came along and I helped the officer get him out. Then we found he was still alive."

Your informant says his name is Jacob Albright, 402 South Adams Street.

The ambulance arrives and Officer Comstock tells the driver to take the unconscious man to Mercy Hospital.

Then you question Officer Comstock but he knows no more than what Albright has told you. You ask if there was any sign of liquor in the car and he says no.

The license card shows that the car belongs to Alfred A. Smith of St. Petersburg. The license number is 82-8434. There is a suitcase in the back seat, but no name on it. The officer will not let you open it. He says he will take it to the police station.

You find a phone and call up the city editor and he tells you to come into the office.

When you reach the office you learn that the city editor has put another reporter on the long distance phone to call Alfred A. Smith.

You call the hospital and learn that the patient is still unconscious. He has been identified by a student identification card found in his pocket. His name is Oren E. Smith and his Gainesville address is 729 North DeQuincy. You recognize this as the address of the Phi Delta Theta fraternity.

You call the Phi Delta Theta house and learn that Oren E. Smith has gone out somewhere in his father's car but the boys do not know where he went. He is a junior in the college of commerce.

The reporter on long distance finally gets the right Smith and he says he will come up from St. Petersburg on the next train. Smith says his son, Oren, has been using the family car. He lives at the Phi Delta Theta house and is 24 years old.

At 10:30 p. m. another reporter, named John Doolittle, gets a phone call from the hospital. It is a tip from an orderly, a friend of his, who says he has heard that there was another man in the car with Smith. The city editor sends Doolittle to the hospital to find out if this is true and to telephone you. You are to write the story.

The city editor tells you to check with the police on this new development. Sergeant Cowan says he has just heard it and will follow it up. You ask about the suitcase and the sergeant says he has opened it but there is nothing inside to identify the owner. There was no liquor in it.

Doolittle phones from the hospital that Smith is still unconscious. But one of the nurses says he roused himself at about 9:40 and said, "Where's George?" She said, "I don't know." Smith said, "George was in the car." Then he lapsed into unconsciousness again. She told the head nurse and the head nurse notified the hospital office and the hospital office notified the police.

The city editor instructs you to tell Doolittle to say at the hospital.

You call the Phi Delta house but no one there knows anything about George.

The city editor puts in another call for St. Petersburg. Mrs. Smith answers. She says her husband is on the way to Gainesville in a neighbor's car. She says George is Owen's cousin, George Ashby, whose home is in Lake City. He has been a patient in Mercy Hospital for the last 10 days. He had an operation for appendicitis.

The city editor sends another man to the police station to watch developments.

You get Jacob Albright on the phone and he says there was no sign of anyone else in the car.

"But he might have been thrown over the rail," Albright says. "The driver was halfway over."

Doolittle calls in from the hospital at 11 p.m. and says Smith, the father, has arrived from St. Petersburg. You tell Doolittle the George Ashby story and he says he will check. In about 20 minutes he calls back and says Ashby was discharged from the hospital at 8:55. Smith, the father, thinks his son was hurrying to the railroad station to enable Ashby to catch the 9:05 train for Lake City. Doolittle says the father has telephoned the police to see if they can find Ashby.

The police station reporter calls in at 11:45 and says the police believe Ashby was thrown over the rail and they are going to search the river for him. He says he will go with them.

Doolittle calls from the hospital at 12:15 and says Smith is still unconscious and his condition is described at the hospital as serious. He says Ashby was 28 years old. He has been in Gainesville three months, clerking for the Bunny Shoe Store. His parents are Mr. and Mrs. William O. Ashby of Lake City. His Gainesville address is 112½ South DeQuincy Avenue.

The police station reporter calls in at 12:30 and says the police have set up powerful floodlights on the bridge and are searching the river below the dam in a boat. They have grappling equipment but are not using it yet. They are sure that anyone who fell into the river would have gone over the dam.

He calls in at 2 a.m. and again at 3 and says they have not found anything. They will not use the grappling irons until daylight.

The city editor sends all his reporters home, except one man to watch at the police station, but there are no new developments.

Write the story for morning news. You have a deadline of one hour.

APPENDIX C  
MEAN STATISTICS FOR EXPERIMENTAL VARIABLES

	<u>Abb.</u>	<u>N</u>	<u>Mean</u>	<u>S.D.</u>	<u>Min.</u>	<u>Max.</u>
Thinking Introversion	TI	65	52.58	7.58	35.0	69.0
Theoretical Orientation	TO	65	49.83	8.69	30.0	63.0
Estheticism	ES	65	54.25	9.18	30.0	69.0
Complexity	CO	65	53.89	8.72	37.0	71.0
Autonomy	AU	65	55.22	8.22	34.0	71.0
Religious Orientation	RO	65	53.68	8.31	36.0	70.0
Social Extroversion	SE	65	50.65	9.56	18.0	66.0
Impulse Expression	IE	65	59.52	9.06	39.0	80.0
Personal Integration	PI	65	49.95	9.57	32.0	68.0
Anxiety Level	AL	65	49.71	9.63	28.0	65.0
Altruism	AM	65	50.88	8.86	29.0	75.0
Personal Outlook	PO	65	47.55	7.70	31.0	71.0
Masculinity/Femininity	MF	65	46.11	8.64	30.0	68.0
Intellectual Disposition	IDC	65	4.72	1.27	2.0	8.0
Grade	GRADE	65	74.88	9.85	43.0	90.0
Age	AGE	65	22.38	7.62	18.0	66.0
Grade Point Average	GPA	62	2.98	.47	1.9	4.0
Typing Speed	TYPING	56	39.25	12.45	20.0	80.0
Total Words	TOTW	65	252.03	70.70	94.0	436.0
Total Sentences	TOTS	65	13.58	4.06	5.0	24.0
Internal Punctuation	PUNCT	65	46.20	15.81	17.0	98.0
Function Words	FUNCT	65	55.31	18.22	11.0	99.0
Adjectives	ADJ	65	15.91	6.07	4.0	30.0
Adverbs	ADV	65	8.54	5.30	1.0	23.0
Nouns	NOUNS	65	68.25	17.01	29.0	113.0
Verbs	VERBS	65	52.74	17.34	19.0	94.0
Type-token Ratio	TTR	65	61.06	4.76	51.0	73.0
Gunning Readability Index	GF	65	10.99	2.20	6.5	20.0
Sentence Length	SL	65	18.96	3.43	10.44	30.86
Redundancy	RED	65	4.19	1.15	1.22	7.29
Pausality	PAUS	65	3.48	.93	1.55	5.86
Emotionalism	EMOT	65	0.20	0.07	1.0	0.40

APPENDIX D  
CORRELATION MATRIX FOR OPI, STYLISTIC INDICES,  
AND DEMOGRAPHIC DATA

## CORRELATION MATRIX--PART A

## INDICES WITH OPI, DEMOGRAPHICS AND INDICES

	11	12	13	14	15	16	17	18
11	1.00	.85*	.11	.10	.07	.06	.15	.09
12	.85*	1.00	-.40*	.14	-.34*	-.29*	.02	-.10
13	.11	-.40*	1.00	-.06	.78*	.67*	.21	.29*
14	.10	.14	-.06	1.00	-.13	-.06	.08	-.03
15	.07	-.34*	.78*	-.13	1.00	.52*	.39*	.22
16	.06	-.29*	.67*	-.06	.52*	1.00	.25*	.26*
17	.15	.02	.21	.08	.39*	.25*	1.00	-.15
18	.09	-.10	.29*	-.03	.22	.26*	-.15	1.00
TI	.19	.23	-.14	.13	-.01	.08	.05	-.09
TO	.15	.15	-.06	.08	-.01	.05	.01	-.05
ES	.07	.08	.03	.09	.13	.06	.11	-.15
CO	.06	.14	-.12	.31	-.18	-.05	.00	-.12
AU	.05	.02	.04	.14	-.12	.15	-.20	.03
RO	.14	.17	-.06	.24	-.18	-.02	-.22	.02
SE	.22	.18	.07	.06	.15	.21	.24	.05
IE	.08	.11	-.01	.22	-.07	.02	-.14	-.11
PI	.12	.17	-.10	-.06	.02	-.02	.06	.06
AL	.09	.11	.00	-.10	.16	.02	.17	-.07
AM	.10	.18	-.17	-.12	-.07	.02	.11	.01
PO	-.08	-.14	-.16	-.05	.25*	-.06	.09	.00
MF	.03	.10	-.13	.03	-.02	-.21	-.16	.08
RB	.05	.12	-.18	-.01	.05	-.11	.09	.02
IDC	-.10	-.16	.13	-.22	.04	-.03	.01	.12
AGE	.11	-.08	.32*	.01	.24	.19	.25*	-.04
GPA	.13	-.03	.25*	-.04	.30*	.36*	.14	.23
201	-.05	-.18	.25*	.18	.15	.18	-.12	.02
GRADE	.02	.04	.00	.10	.20	.10	.08	.10
TYPING	.06	.06	.05	.10	.07	.16	.08	-.10



CORRELATION MATRIX--PART B  
OPI WITH DEMOGRAPHICS AND OPI

	TI	TO	ES	CO	AU	RO	SE	IE	PI	AL	AM	PO	MF	RB	IDS
TI	1.00	.65*	.66*	.50*	.34*	.18	.22	.16	.01	.01	.43*	-.64*	-.01*	.41*	-.88*
TO	.65*	1.00	.33*	.46*	.34*	.31*	.22	.18	.00	.12	.24	-.50*	-.09	.46*	-.72*
ES	.66*	.33*	1.00	.50*	.22	.17	.22	.47*	-.28*	-.13	.11	-.29	-.33*	-.10	-.68*
CO	.50*	.46*	.50*	1.00	.42*	.62*	-.04	.24	.08	-.06	.08	.57*	-.20	-.12	-.45*
AU	.34*	.34*	.22	.42*	1.00	.62*	-.04	.24	.08	-.06	.08	-.57*	-.20	-.10	-.45*
RO	.18	.31*	.17	.62*	.62*	1.00	-.11	.37*	.05	-.07	-.18	-.28*	.08	-.10	-.32*
SE	.22	.22	.22	-.04	-.04	-.11	1.00	.26*	.36*	.43*	.53*	-.12	.24	.32*	-.22
IE	.16	.18	.47*	.24	.24	.37*	.26*	1.00	-.41*	-.13	-.18	.03	-.23*	-.58*	-.35*
PI	.01	.00	-.28*	.08	.08	.05	.36*	-.41*	1.00	.67*	.55	-.06	.43*	.60*	.11
AL	.01	.12	-.13	-.06	-.06	-.07	.43*	-.13	.67*	1.00	.55	.06	.29*	.41*	.03
AM	.43*	.24	.11	.08	.08	-.18	.53*	-.18	.55	.55*	1.00	-.40*	-.09	.56*	-.30*
PO	-.64*	-.50*	-.29*	-.57*	-.57*	-.28*	-.12	.03	-.06	.06	-.40*	1.00	.29*	.26*	.56*
MF	-.31*	-.04	-.33*	-.20	-.20	.08	-.24	-.33*	.43*	.29*	-.04	.29*	1.00	.19	.34*
RB	.41*	.46*	-.10	-.12	-.12	-.10	.32*	-.39*	.60*	.41*	.56*	-.26*	.19	1.00	-.30*
IDC	-.88*	-.72*	-.68*	-.45*	-.45*	-.32*	-.22*	-.35*	.11	.03	-.30*	.56*	.24*	-.30*	1.00
AGE	-.13	-.06	-.19	-.11	.00	-.01	-.01	-.17	.02	-.06	-.15	.11	.16	-.08	.20
GPA	.30*	.02	.27*	.08	.26*	-.10	-.07	.27*	.06	-.10	.16	-.25	-.31*	.13	-.23
201	.00	.00	.13	-.01	.06	.06	-.12	.17	-.32*	-.43*	-.21	.01	-.23	.10	-.04
GRADE	.33*	.09	.21	-.04	.03	-.16	-.02	-.15	.09	.02	.18	-.05	-.11	.18	-.28
TYPING	.05	.08	.09	.03	.03	-.04	.11	-.02	-.10	-.02	-.06	-.08	-.34*	.05	-.04

CORRELATION MATRIX--PART C  
DEMOGRAPHICS WITH DEMOGRAPHICS

	<u>AGE</u>	<u>GPA</u>	<u>201</u>	<u>GRADE</u>	<u>TYPING</u>
AGE	1.00	.06	.23	.12	-.07
GPA	.06	1.00	.20	.24	.14
201	.23	.20	1.00	.00	.29*
GRADE	.12	.24	.00	1.00	.07
TYPING	-.07	.14	.29*	.07	1.00

## Notes to accompany correlation matrices

1. \* indicates  $r$  equals or exceeds value of  $p < .05$
2. Abbreviations used on Indices. 11 - Total Words, 12 - Total Sentences, 13 - Sentence Length, 14 = Lexical Diversity, 15 = Redundancy, 16 = Pausality, 17 - Emotiveness, 18 = Gunning Readability Index. All other abbreviations consistent with table in Appendix C.
3. Abbreviation 201 in this appendix is question asking subject if Journalism 201 had been previously completed.

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## BIBLIOGRAPHICAL SKETCH

The author was born in Pittsburgh in 1947, a bleak year for the now-famous Pittsburgh Steelers. Like many other children, he spent his childhood growing up. Upon growing up, the author attended a private men's college in Pennsylvania. This occurrence, in part, prompted the author to pursue and marry the former Marlene Forsyth, who is now the former Marlene Ruffner. In December 1969, the author was commissioned both an officer and a gentleman in the United States Army. The author was one of the brave, young men who fought for our country in Southeast Asia. After three years of active military service, the author was placed on reserve officer and gentleman status. While in this status of reserve, he decided to pursue graduate study at the University of Florida. This was considered a shrewd move by many, since some status would be necessary when officer and gentleman status expired in 1975. A Master of Arts degree in Journalism and Communications was conferred upon the author in the nick of time, early in 1975. Being caught up in the whole thing, the author continued with doctoral study in the Speech Department. Among other things, the author competed actively with Michael Burgoon for the distinction of being the snazziest dresser in the department. After relinquishing gentleman status through an act of Congress, the author quickly regained this distinction by coming to the aid of a waitress in distress. The subsequent hurling of the author through a large window by the waitress' assailants convinced the author


that it much more prudent being a scholar than a gentleman. To that end the author devoted himself for the remainder of graduate study.

The job market being what it is, the author decided to cover all corners by keeping company with a judge's daughter. Drawing from experiences learned through graduate study, this was done in a highly tasteful manner.

Future plans for the author include returning his car to operating status, obtaining the services of a really good Chinese laundry, and working at a reputable university. One of the more deeply held beliefs of the author is that people without a sense of humor are humorless. While some people question the meaning of life, the author questions whether people really ever understand each other.

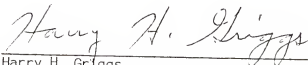
Be it known that the author referred to herein is Michael Ruffner.

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.



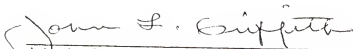
Michael Burgoon, Chairman  
Associate Professor of Speech

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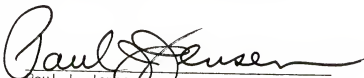
Harry H. Griggs  
Professor of Journalism and Communications

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John L. Griffith  
Professor of Journalism and Communications

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Paul J. Jensen  
Professor of Speech

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.



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This dissertation was submitted to the Graduate Faculty of the Department of Speech in the College of Arts and Sciences and to the Graduate Council, and was accepted as partial fulfillment of the requirements for the degree of Doctor of Philosophy.

December, 1976

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